FIG.1

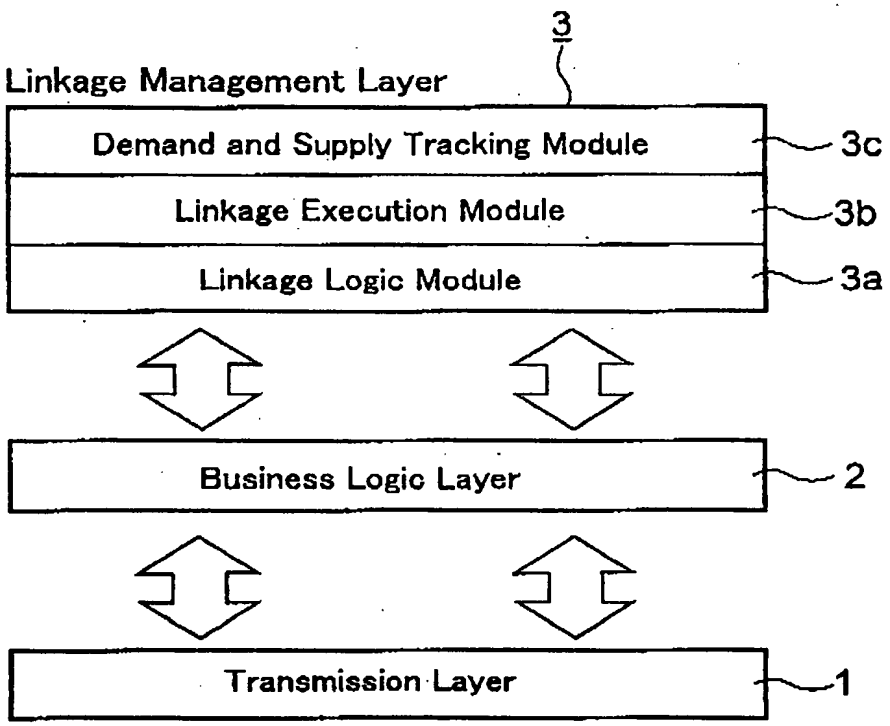

3
Linkage Management Layer
Demand and Supply Tracking Module
3c
Linkage Execution Module
3b
Linkage Logic Module
3a
Business Logic Layer
2
Transmission Layer
1

FIG.2

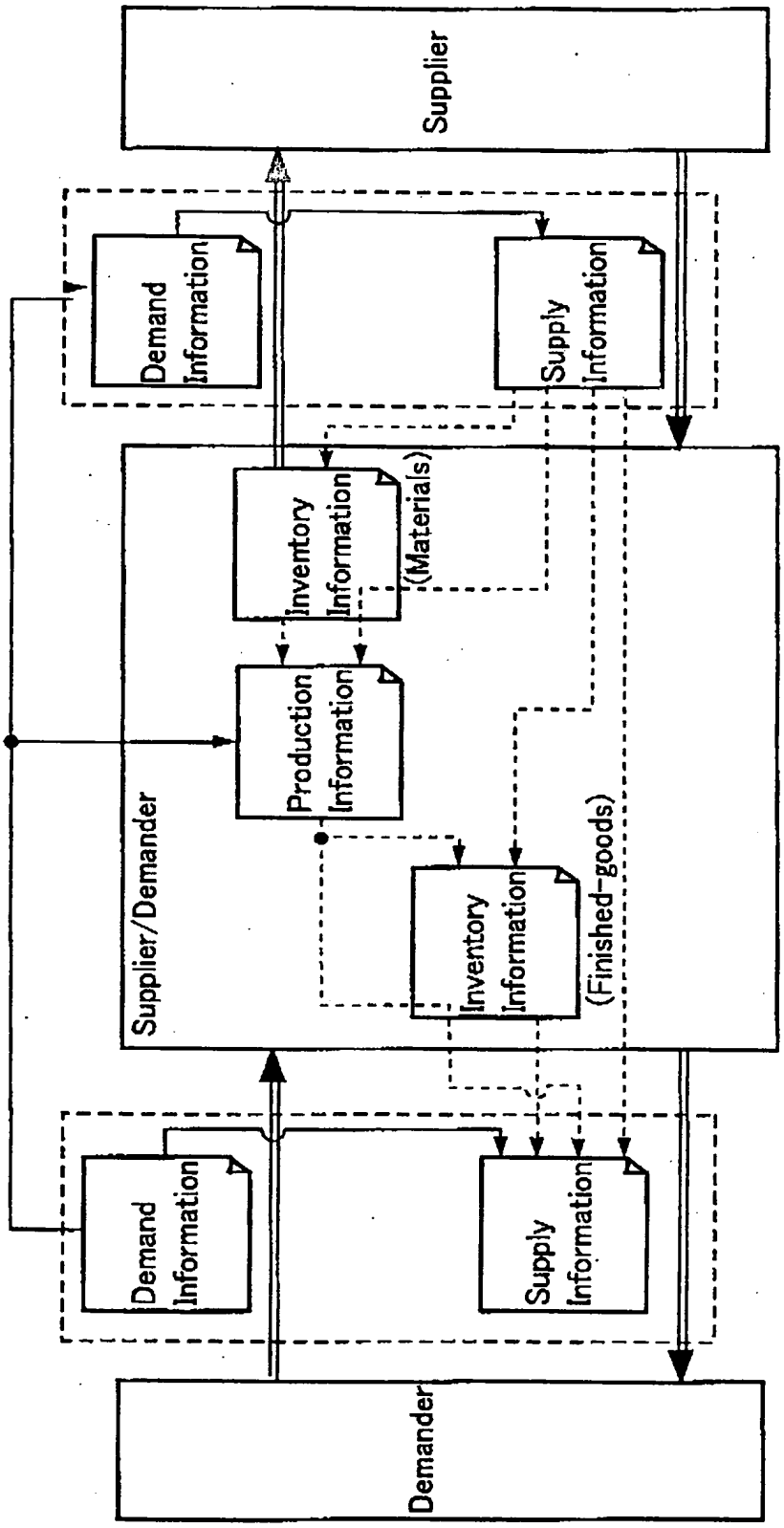

Supplier
Demand Information
Supply Information
Inventory Information (Materials)
Production Information
Inventory Information (Finished-goods)
Supplier/Demander
Demand Information
Supply Information
Demander

FIG.3

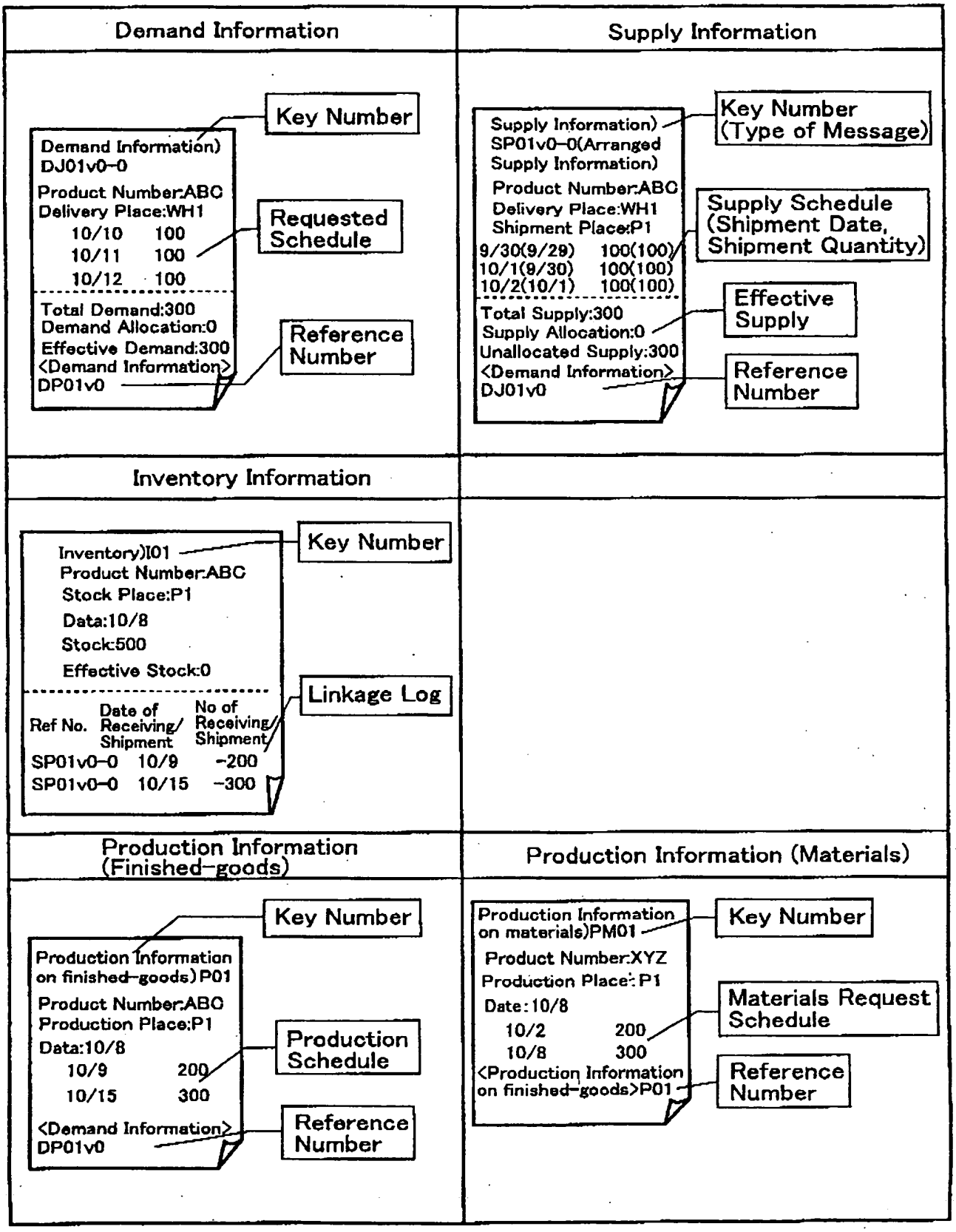

Demand Information
Key Number
Demand Information)
DJ01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 100
10/11 100
10/12 100
Requested Schedule
Total Demand:300
Demand Allocation:0
Effective Demand:300
<Demand Information>
DP01v0
Reference Number
Supply Information
Supply Information)
SP01v0-0(Arranged Supply Information)
Key Number (Type of Message)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
9/30(9/29) 100(100)
10/1(9/30) 100(100)
10/2(10/1) 100(100)
Supply Schedule (Shipment Date, Shipment Quantity)
Total Supply:300
Supply Allocation:0
Unallocated Supply:300
Effective Supply
<Demand Information>
DJ01v0
Reference Number
Inventory Information
Inventory)I01
Key Number
Product Number:ABC
Stock Place:P1
Data:10/8
Stock:500
Effective Stock:0
Ref No. Date of Receiving/ Shipment No of Receiving/ Shipment
SP01v0-0 10/9 -200
SP01v0-0 10/15 -300
Linkage Log
Production Information (Finished-goods)
Key Number
Production Information on finished-goods) P01
Product Number:ABC
Production Place:P1
Data:10/8
10/9 200
10/15 300
Production Schedule
<Demand Information>
DP01v0
Reference Number
Production Information (Materials)
Production Information on materials)PM01
Key Number
Product Number:XYZ
Production Place: P1
Date:10/8
10/2 200
10/8 300
Materials Request Schedule
<Production Information on finished-goods>P01
Reference Number

FIG.4A

Product Number	Delivery Place	Requested Delivery Date	Requested Delivery Quantity
PartABC	WH1	10-Oct	200
		15-Oct	300
		19-Oct	100

FIG.4B

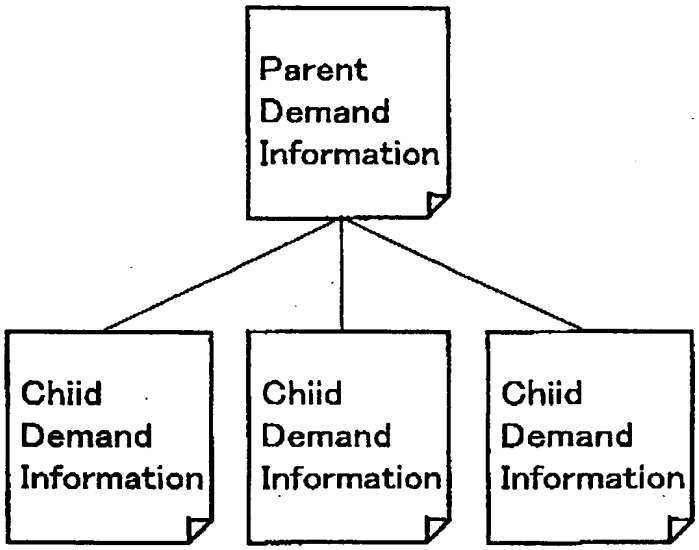


FIG.4C

DELFOR:001		1W	2W	3W	4W
	ItemABC	200	300	100	500

DELFOR:002		2W	3W	4W	5W
	ItemABC	300	100	500	300

Requested Quantity is duplicated

FIG.5A

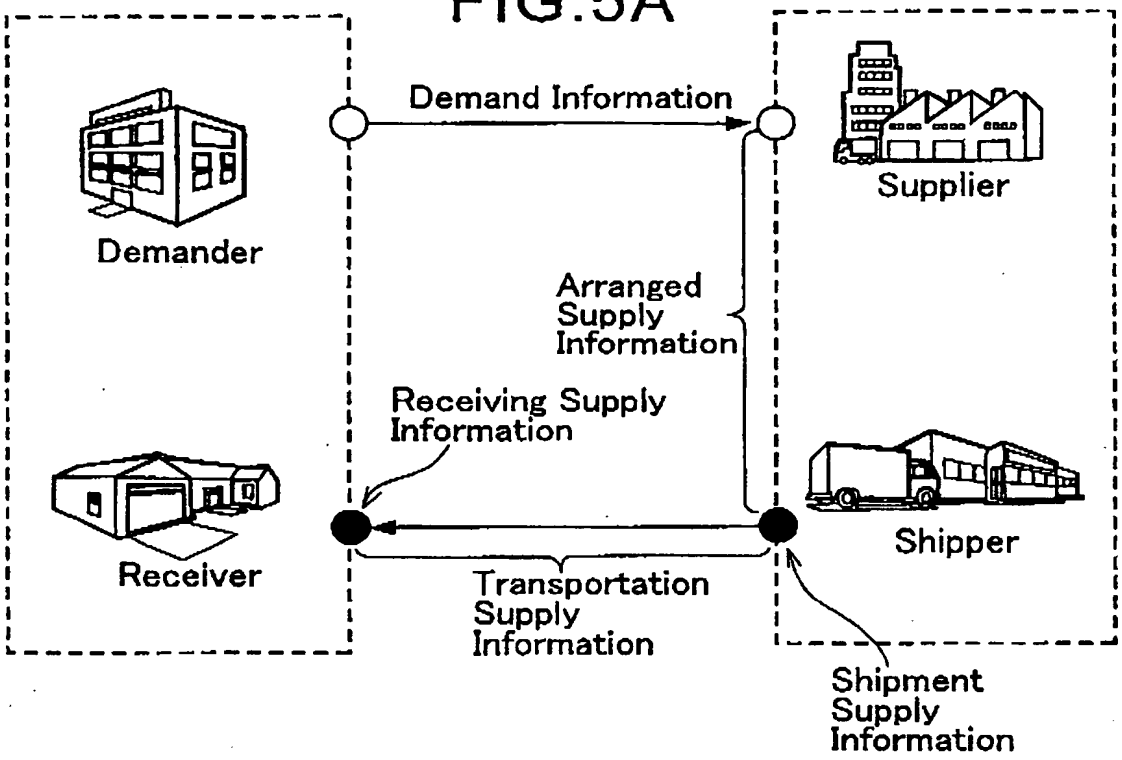


FIG.5B

Product Number	Delivery Place	Product Number	Receiving Quantity
PartABC	WH1	10-Oct	200
		15-Oct	300
		19-Oct	100

FIG.5C

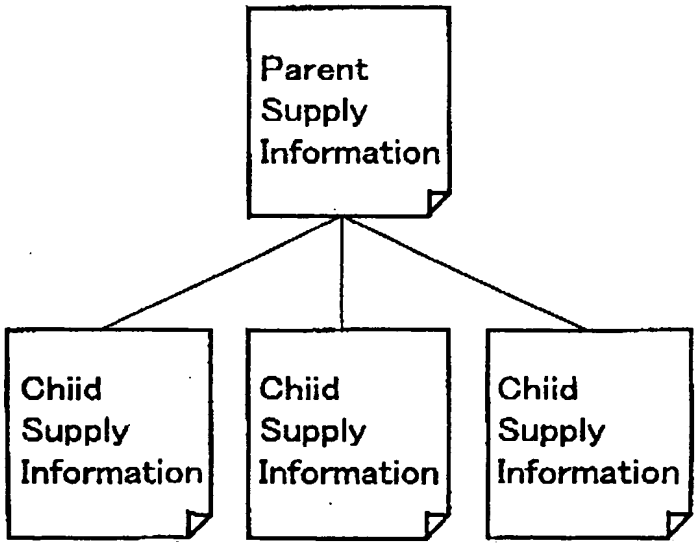
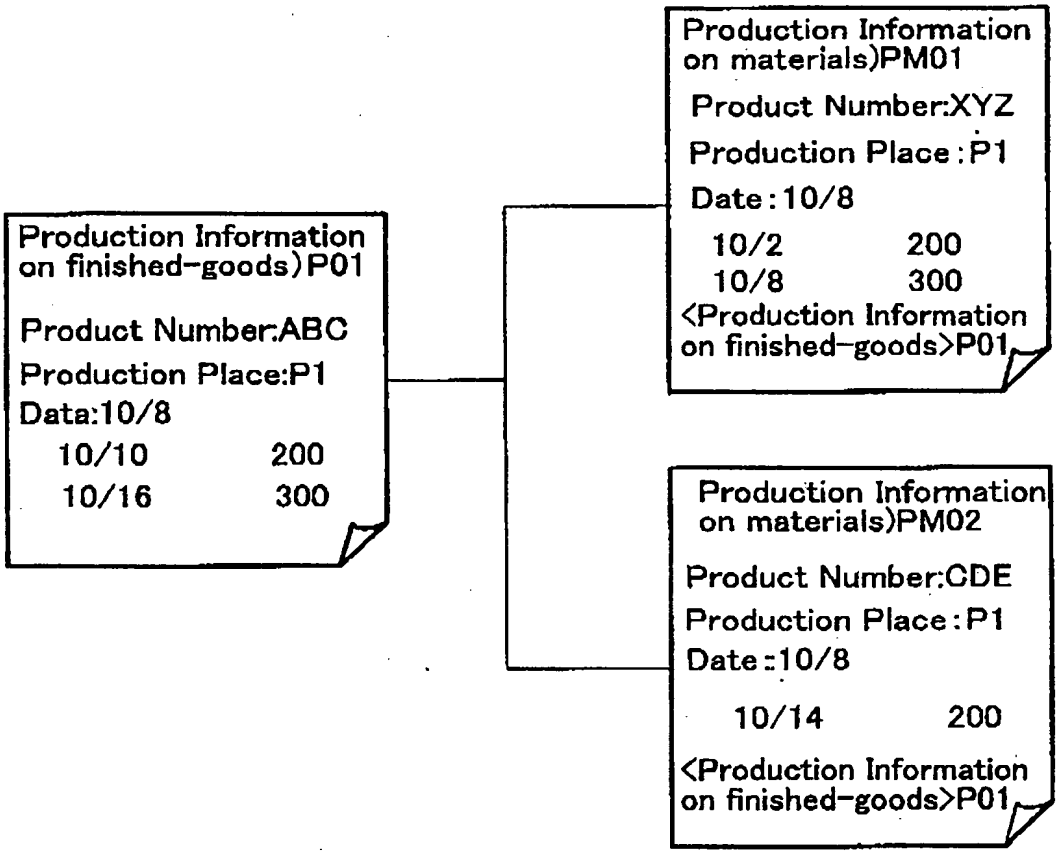


FIG.6


Production Information on finished-goods)P01
Product Number:ABC
Production Place:P1
Data:10/8
10/10 200
10/16 300
Production Information on materials)PM01
Product Number:XYZ
Production Place:P1
Date:10/8
10/2 200
10/8 300
<Production Information on finished-goods>P01
Production Information on materials)PM02
Product Number:CDE
Production Place:P1
Date:10/8
10/14 200
<Production Information on finished-goods>P01

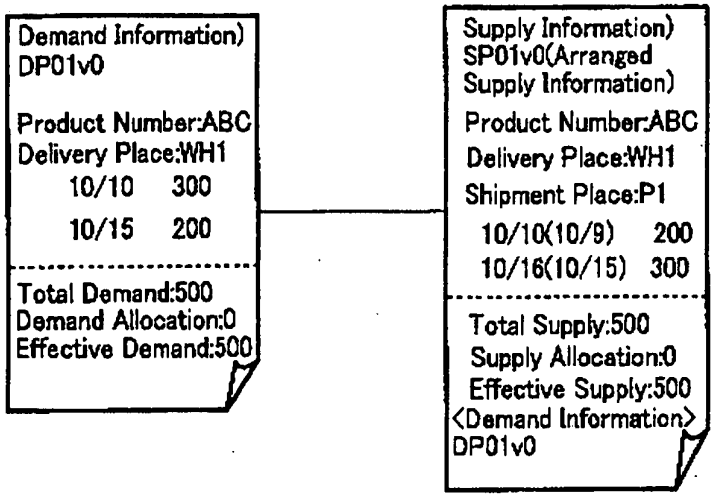
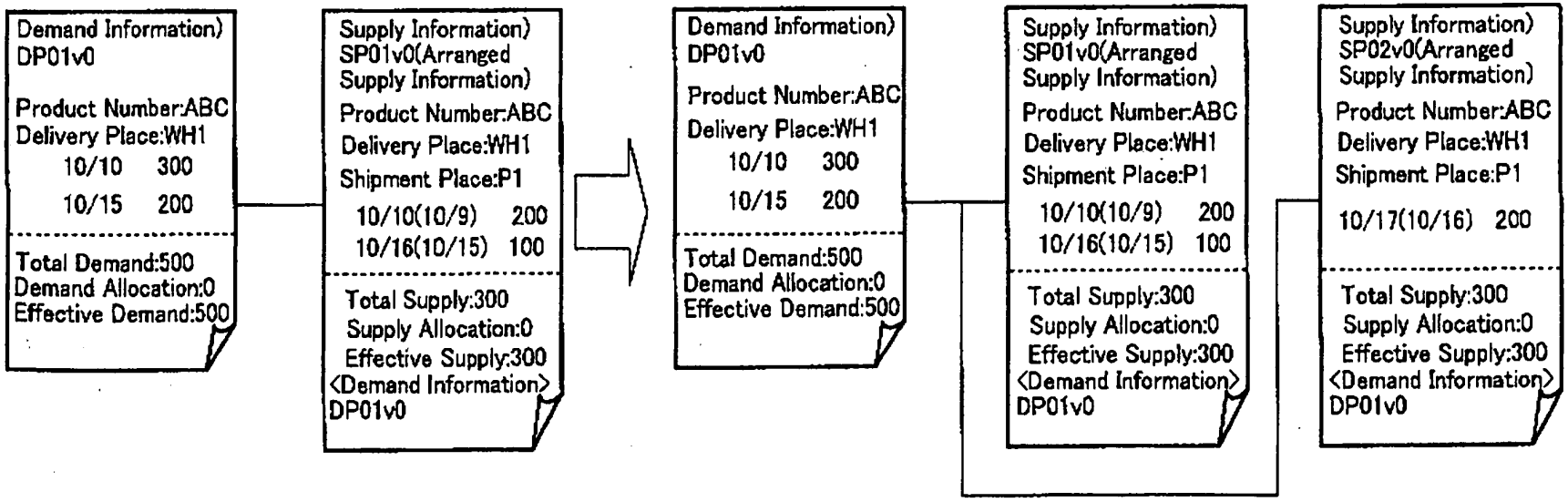


FIG.7A

FIG. 7 B



10/550684

FIG.8

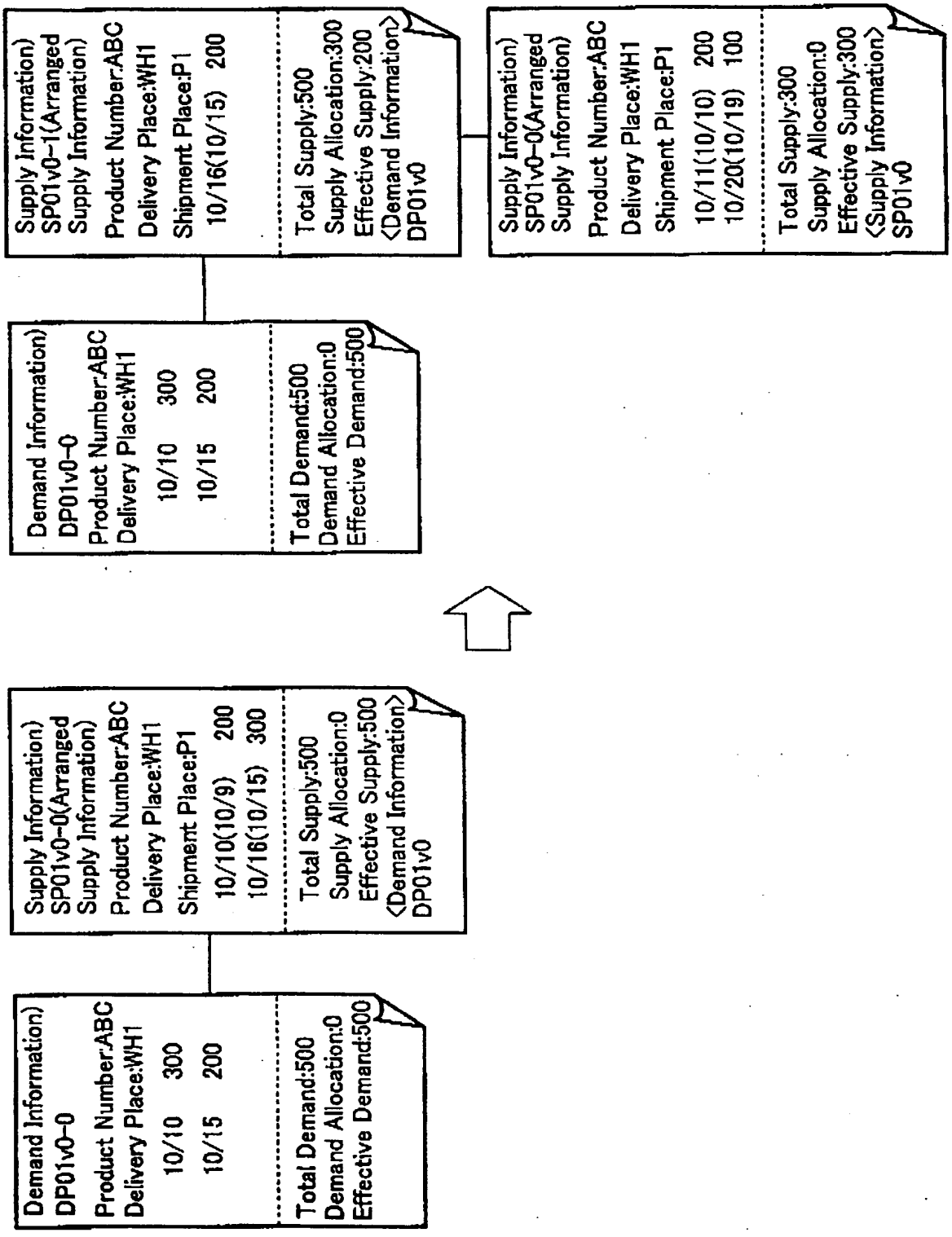
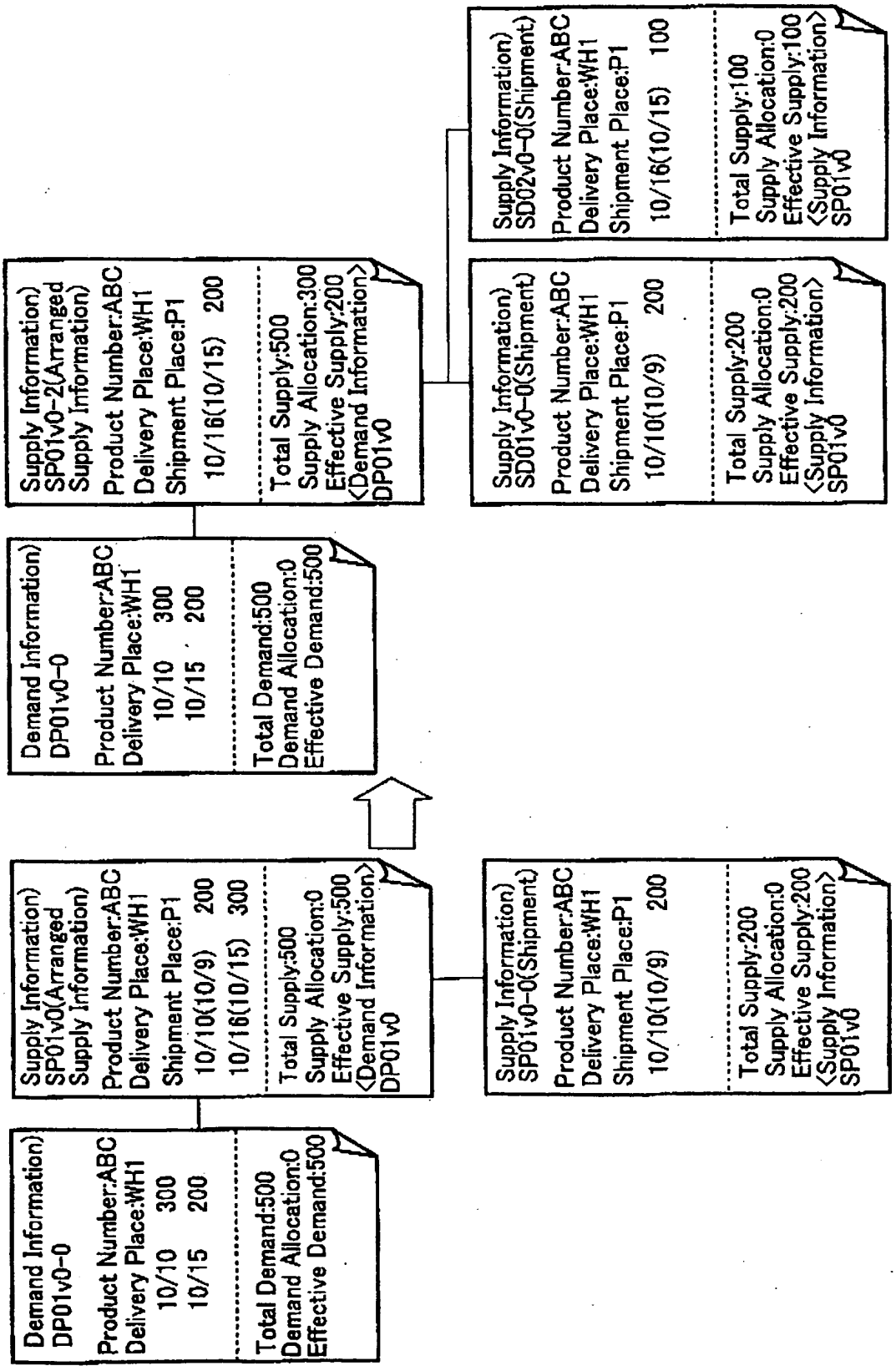

Demand Information)
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 300
10/15 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
Supply Information)
SP01v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
10/16(10/15) 300
Total Supply:500
Supply Allocation:0
Effective Supply:500
<Demand Information>
DP01v0
Demand Information)
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 300
10/15 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
Supply Information)
SP01v0-1(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 200
Total Supply:500
Supply Allocation:300
Effective Supply:200
<Demand Information>
DP01v0
Supply Information)
SP01v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/11(10/10) 200
10/20(10/19) 100
Total Supply:300
Supply Allocation:0
Effective Supply:300
<Supply Information>
SP01v0

FIG.9


Demand Information
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 300
10/15 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
Supply Information
SP01v0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
10/16(10/15) 300
Total Supply:500
Supply Allocation:0
Effective Supply:500
<Demand Information>
DP01v0
Supply Information
SP01v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
Total Supply:200
Supply Allocation:0
Effective Supply:200
<Supply Information>
SP01v0
Demand Information
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 300
10/15 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
Supply Information
SP01v0-2(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 200
Total Supply:500
Supply Allocation:300
Effective Supply:200
<Demand Information>
DP01v0
Supply Information
SD01v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
Total Supply:200
Supply Allocation:0
Effective Supply:200
<Supply Information>
SP01v0
Supply Information
SD02v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 100
Total Supply:100
Supply Allocation:0
Effective Supply:100
<Supply Information>
SP01v0

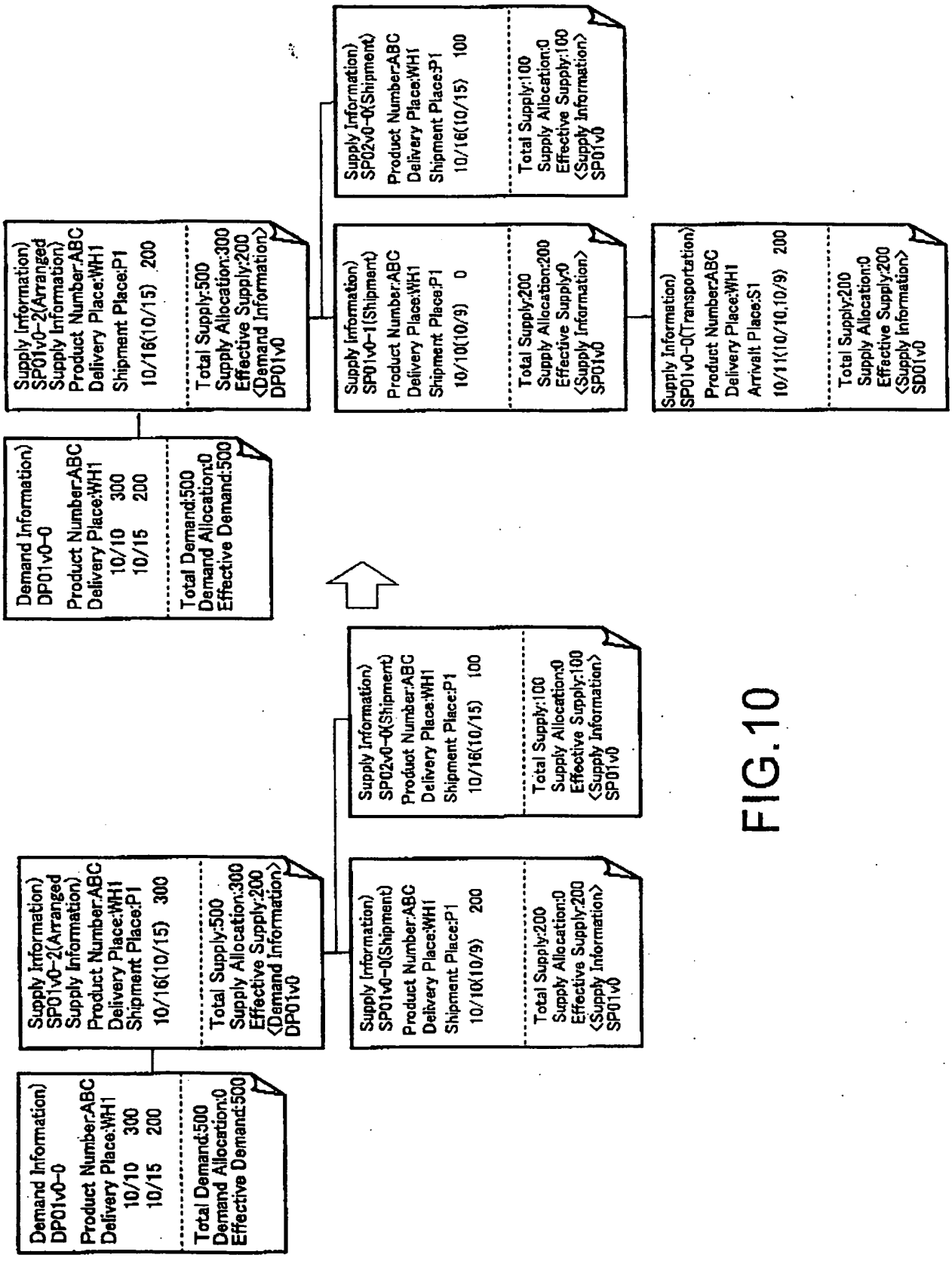

Demand Information)
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 300
10/15 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
Supply Information)
SP01v0-2(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 300
Total Supply:500
Supply Allocation:300
Effective Supply:200
<Demand Information>
DP01v0
Supply (Information)
SP01v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
Total Supply:200
Supply Allocation:0
Effective Supply:200
<Supply Information>
SP01v0
Supply Information)
SP02v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 100
Total Supply:100
Supply Allocation:0
Effective Supply:100
<Supply Information>
SP01v0
Demand Information)
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 300
10/15 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
Supply Information)
SP01v0-2(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 200
Total Supply:500
Supply Allocation:300
Effective Supply:200
<Demand Information>
DP01v0
Supply Information)
SP01v0-1(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 0
Total Supply:200
Supply Allocation:200
Effective Supply:0
<Supply Information>
SP01v0
Supply Information)
SP01v0-0(Transportation)
Product Number:ABC
Delivery Place:WH1
Arrivalt Place:S1
10/11(10/10,10/9) 200
Total Supply:200
Supply Allocation:0
Effective Supply:200
<Supply Information>
SD01v0
Supply Information)
SP02v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 100
Total Supply:100
Supply Allocation:0
Effective Supply:100
<Supply Information>
SP01v0

FIG.10

FIG.11

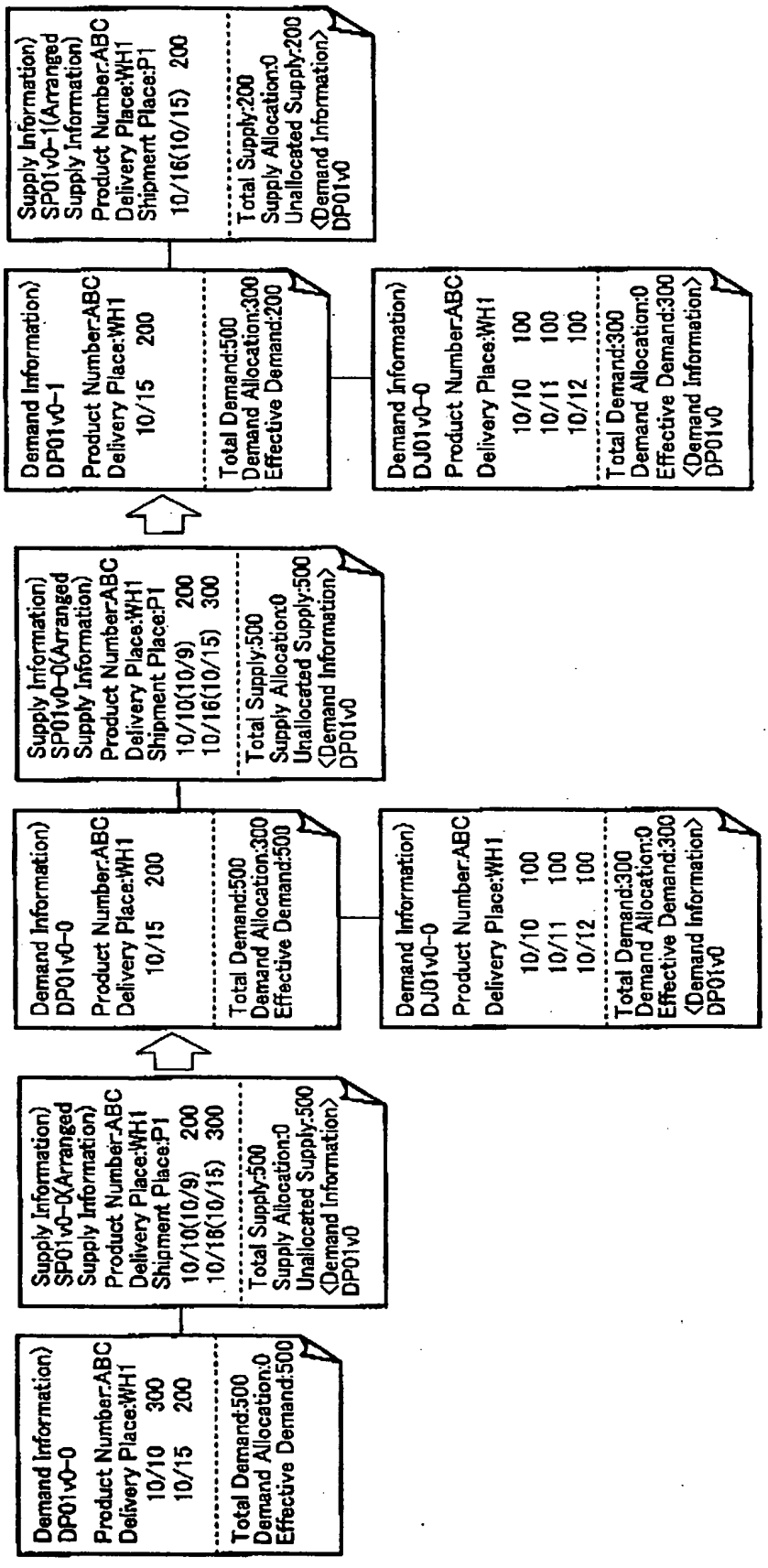

Demand Information)
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 300
10/15 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
Supply Information)
SP01v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
10/18(10/15) 300
Total Supply:500
Supply Allocation:0
Unallocated Supply:500
<Demand Information>
DP01v0
Demand Information)
DP01v0-0
Product Number:ABC
Delivery Place:WH1
10/15 200
Total Demand:500
Demand Allocation:300
Effective Demand:500
Demand Information)
DJ01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 100
10/11 100
10/12 100
Total Demand:300
Demand Allocation:0
Effective Demand:300
<Demand Information>
DP01v0
Supply Information)
SP01v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
10/16(10/15) 300
Total Supply:500
Supply Allocation:0
Unallocated Supply:500
<Demand Information>
DP01v0
Demand Information)
DP01v0-1
Product Number:ABC
Delivery Place:WH1
10/15 200
Total Demand:500
Demand Allocation:300
Effective Demand:200
Demand Information)
DJ01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 100
10/11 100
10/12 100
Total Demand:300
Demand Allocation:0
Effective Demand:300
<Demand Information>
DP01v0
Supply Information)
SP01v0-1(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 200
Total Supply:200
Supply Allocation:0
Unallocated Supply:200
<Demand Information>
DP01v0

FIG.12

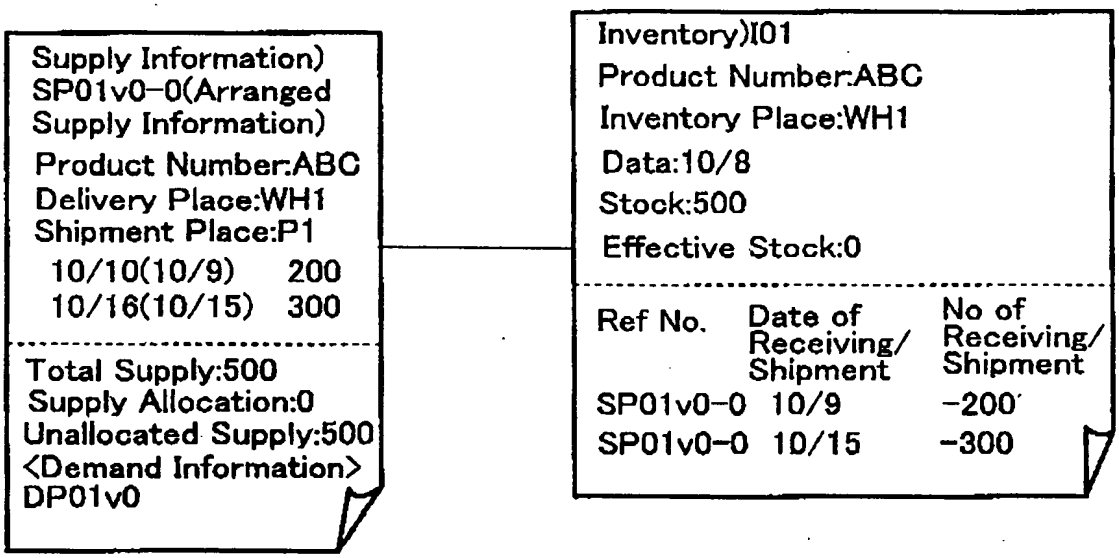

Supply Information)
SP01v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
10/16(10/15) 300
Total Supply:500
Supply Allocation:0
Unallocated Supply:500
<Demand Information>
DP01v0
Inventory)I01
Product Number:ABC
Inventory Place:WH1
Data:10/8
Stock:500
Effective Stock:0
Ref No.
Date of Receiving/ Shipment
No of Receiving/ Shipment
SP01v0-0 10/9 -200
SP01v0-0 10/15 -300

FIG. 13

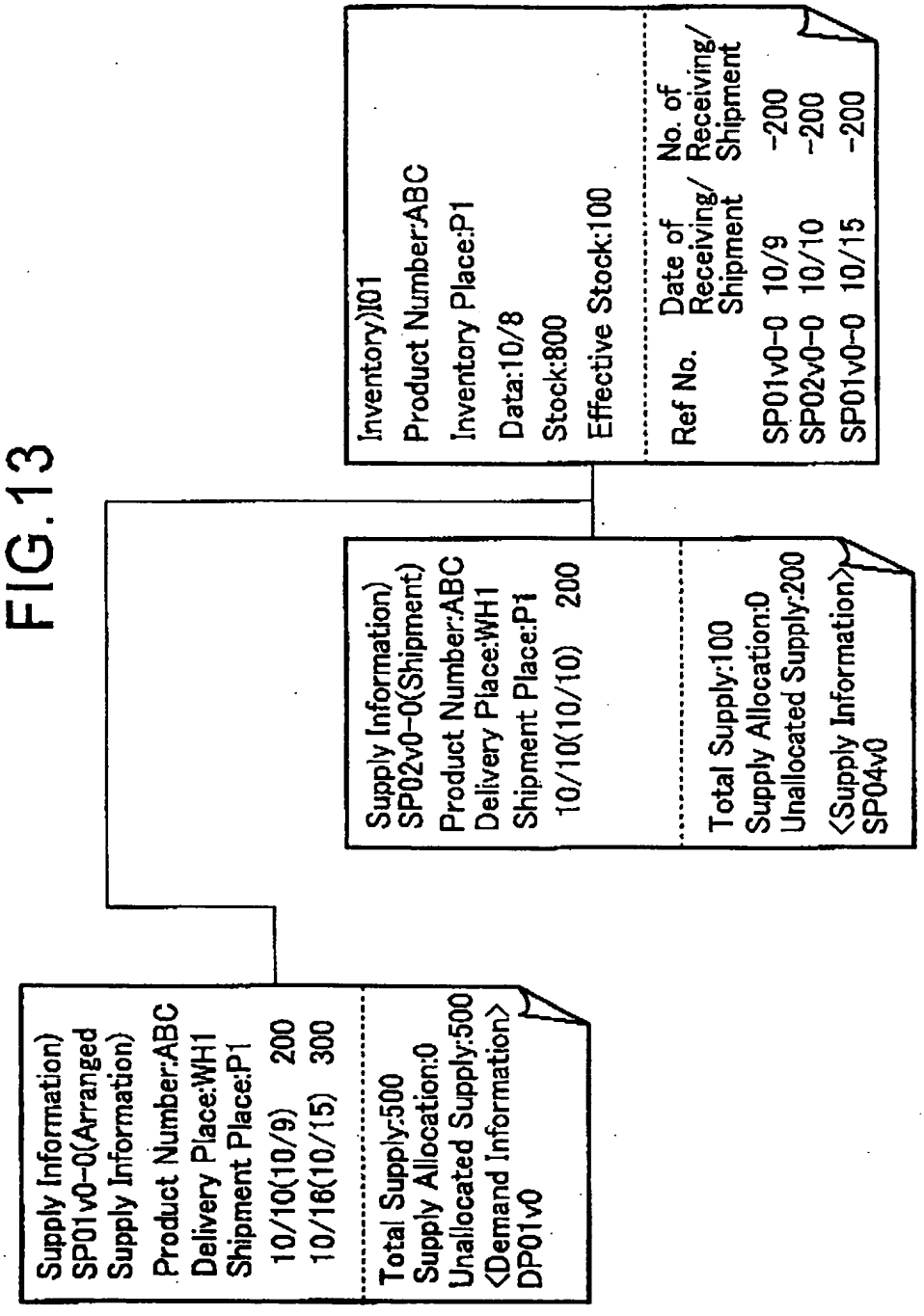

Supply Information)
SP01v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
10/16(10/15) 300
Total Supply:500
Supply Allocation:0
Unallocated Supply:500
<Demand Information>
DP01v0
Supply Information)
SP02v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/10) 200
Total Supply:100
Supply Allocation:0
Unallocated Supply:200
<Supply Information>
SP04v0
Inventory)I01
Product Number:ABC
Inventory Place:P1
Data:10/8
Stock:800
Effective Stock:100
Ref No. Date of Receiving/ Shipment No. of Receiving/ Shipment
SP01v0-0 10/9 -200
SP02v0-0 10/10 -200
SP01v0-0 10/15 -200

FIG.14

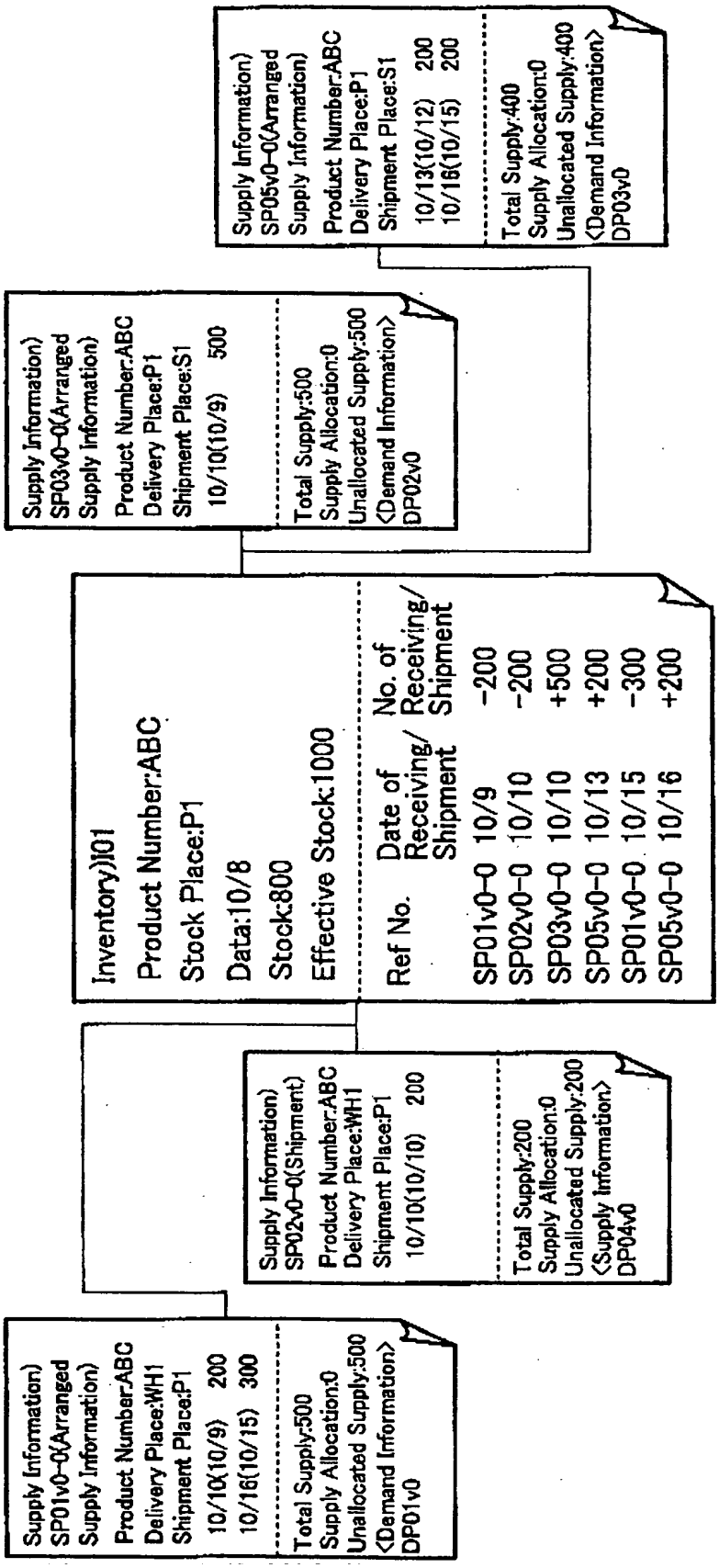

Supply Information)
SP01v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/9) 200
10/16(10/15) 300
Total Supply:500
Supply Allocation:0
Unallocated Supply:500
<Demand Information>
DP01v0
Supply Information)
SP02v0-0(Shipment)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/10(10/10) 200
Total Supply:200
Supply Allocation:0
Unallocated Supply:200
<Supply Information>
DP04v0
Inventory)I01
Product Number:ABC
Stock Place:P1
Data:10/8
Stock:800
Effective Stock:1000
Ref No. Date of Receiving/Shipment No. of Receiving/Shipment
SP01v0-0 10/9 -200
SP02v0-0 10/10 -200
SP03v0-0 10/10 +500
SP05v0-0 10/13 +200
SP01v0-0 10/15 -300
SP05v0-0 10/16 +200
Supply Information)
SP03v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:P1
Shipment Place:S1
10/10(10/9) 500
Total Supply:500
Supply Allocation:0
Unallocated Supply:500
<Demand Information>
DP02v0
Supply Information)
SP05v0-0(Arranged Supply Information)
Product Number:ABC
Delivery Place:P1
Shipment Place:S1
10/13(10/12) 200
10/16(10/15) 200
Total Supply:400
Supply Allocation:0
Unallocated Supply:400
<Demand Information>
DP03v0

FIG.15A

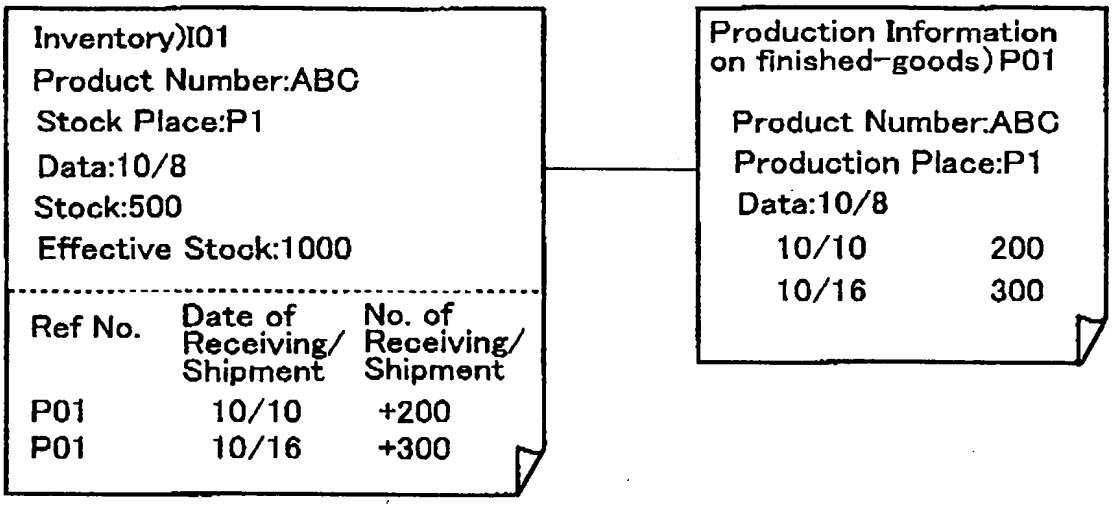


FIG. 15B

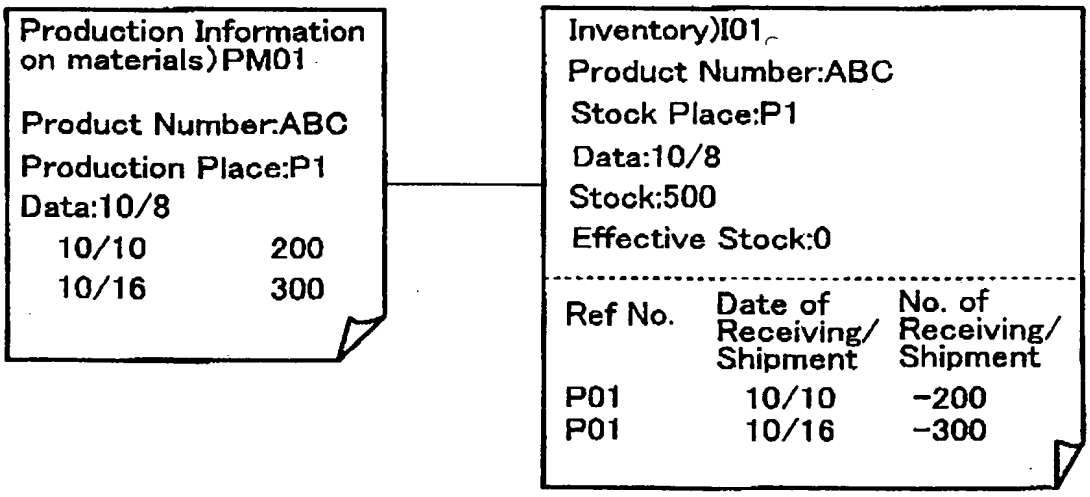


FIG.16

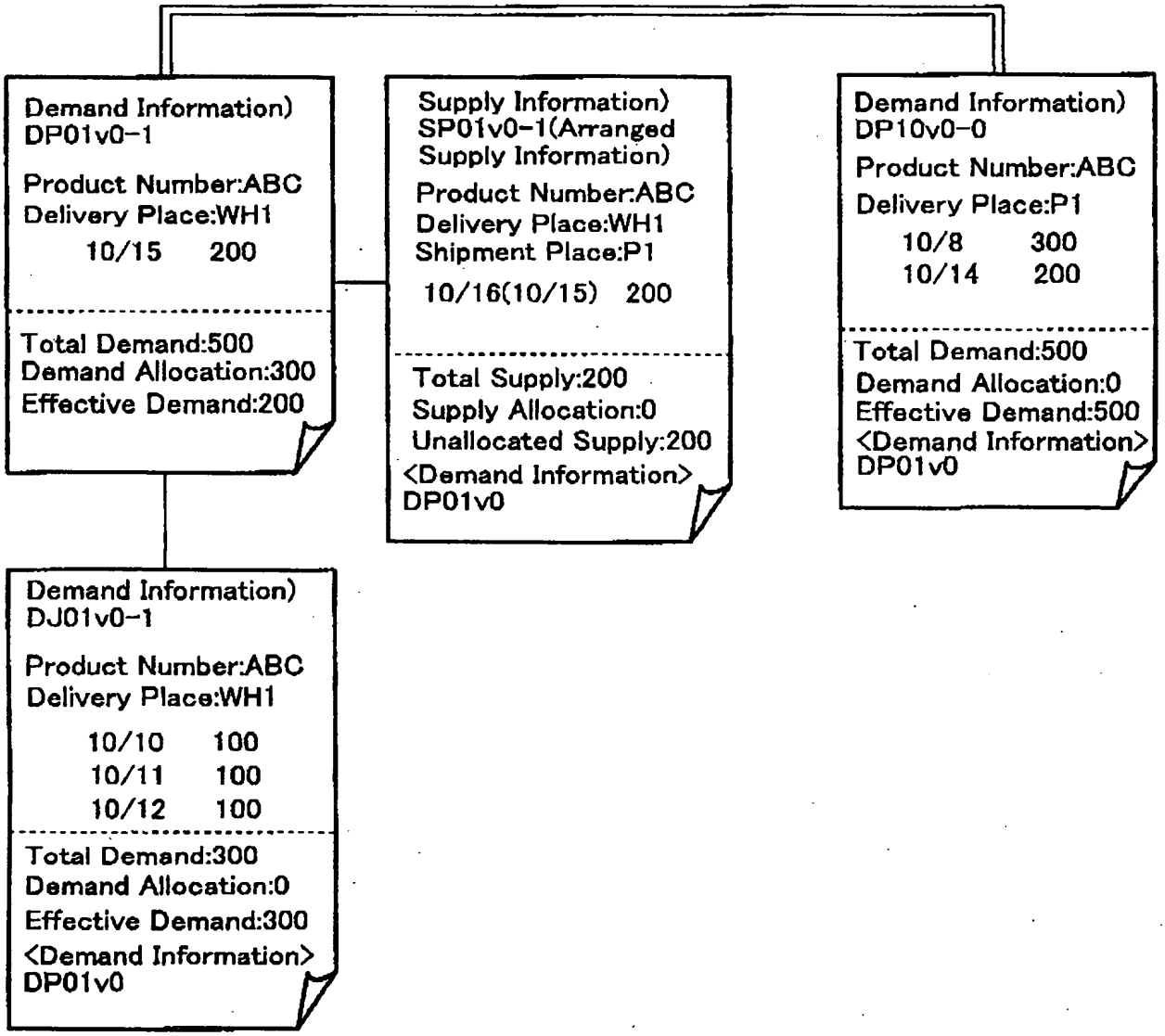

Demand Information)
DP01v0-1
Product Number:ABC
Delivery Place:WH1
10/15 200
Total Demand:500
Demand Allocation:300
Effective Demand:200
Supply Information)
SP01v0-1(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 200
Total Supply:200
Supply Allocation:0
Unallocated Supply:200
<Demand Information>
DP01v0
Demand Information)
DP10v0-0
Product Number:ABC
Delivery Place:P1
10/8 300
10/14 200
Total Demand:500
Demand Allocation:0
Effective Demand:500
<Demand Information>
DP01v0
Demand Information)
DJ01v0-1
Product Number:ABC
Delivery Place:WH1
10/10 100
10/11 100
10/12 100
Total Demand:300
Demand Allocation:0
Effective Demand:300
<Demand Information>
DP01v0

FIG.17

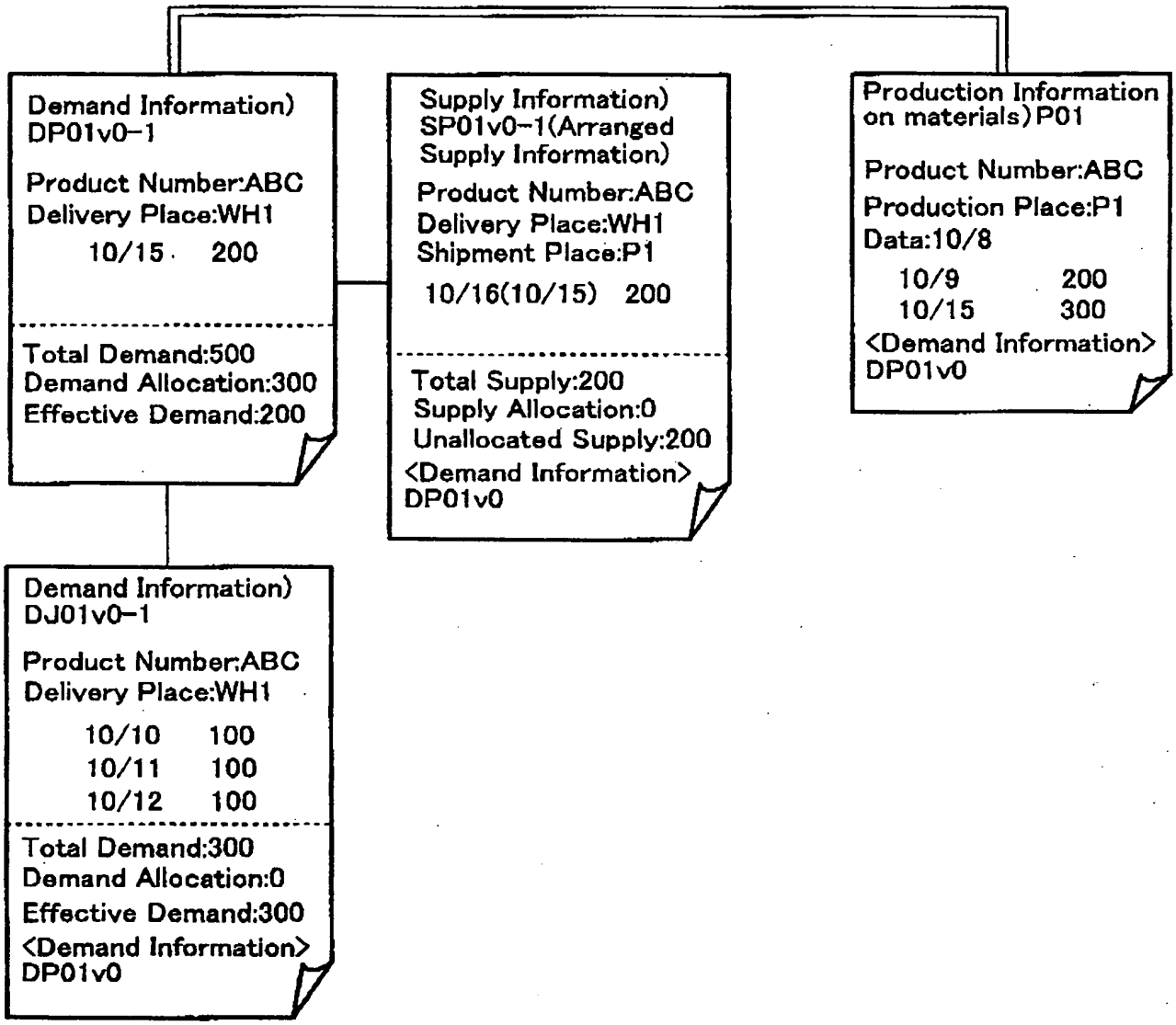

Demand Information)
DP01v0-1
Product Number:ABC
Delivery Place:WH1
10/15 200
Total Demand:500
Demand Allocation:300
Effective Demand:200
Supply Information)
SP01v0-1(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 200
Total Supply:200
Supply Allocation:0
Unallocated Supply:200
<Demand Information>
DP01v0
Production Information on materials) P01
Product Number:ABC
Production Place:P1
Data:10/8
10/9 200
10/15 300
<Demand Information>
DP01v0
Demand Information)
DJ01v0-1
Product Number:ABC
Delivery Place:WH1
10/10 100
10/11 100
10/12 100
Total Demand:300
Demand Allocation:0
Effective Demand:300
<Demand Information>
DP01v0

FIG.18

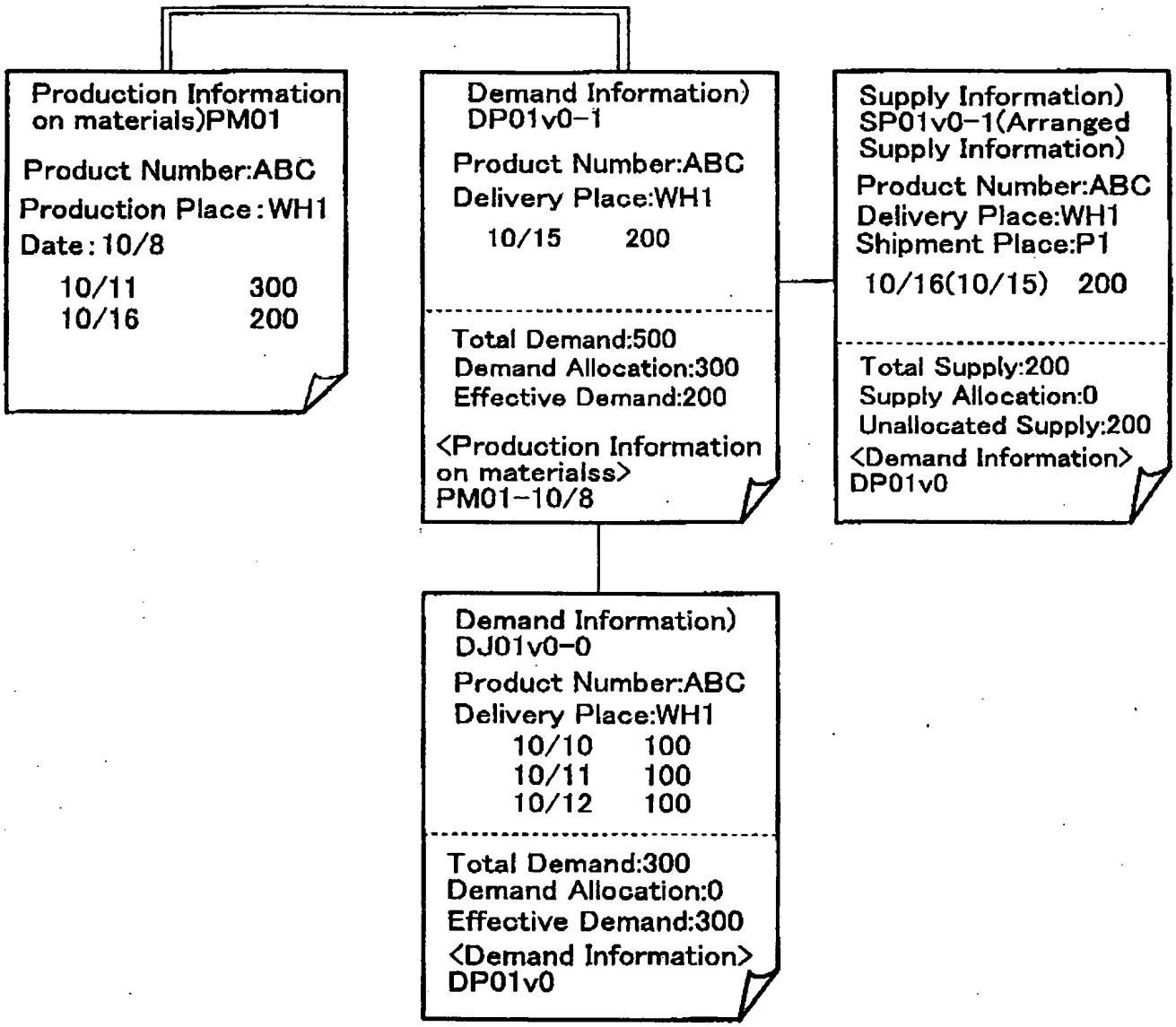

Production Information on materials)PM01
Product Number:ABC
Production Place:WH1
Date:10/8
10/11 300
10/16 200
Demand Information) DP01v0-1
Product Number:ABC
Delivery Place:WH1
10/15 200
Total Demand:500
Demand Allocation:300
Effective Demand:200
<Production Information on materialss>
PM01-10/8
Supply Information) SP01v0-1(Arranged Supply Information)
Product Number:ABC
Delivery Place:WH1
Shipment Place:P1
10/16(10/15) 200
Total Supply:200
Supply Allocation:0
Unallocated Supply:200
<Demand Information>
DP01v0
Demand Information) DJ01v0-0
Product Number:ABC
Delivery Place:WH1
10/10 100
10/11 100
10/12 100
Total Demand:300
Demand Allocation:0
Effective Demand:300
<Demand Information>
DP01v0

FIG.19

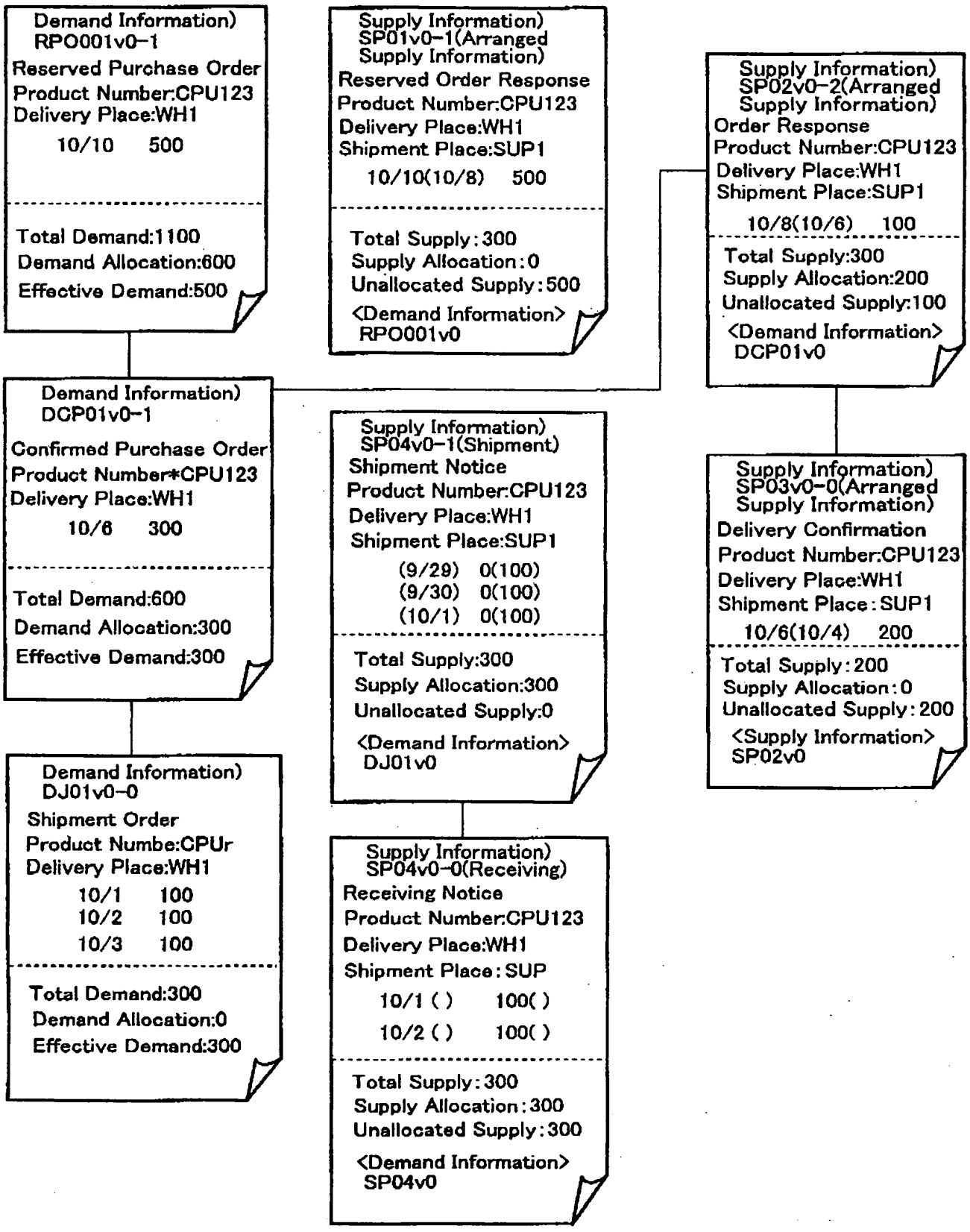

Demand Information)
RPO001v0-1
Reserved Purchase Order
Product Number:CPU123
Delivery Place:WH1
10/10 500
Total Demand:1100
Demand Allocation:600
Effective Demand:500
Supply Information)
SP01v0-1(Arranged Supply Information)
Reserved Order Response
Product Number:CPU123
Delivery Place:WH1
Shipment Place:SUP1
10/10(10/8) 500
Total Supply:300
Supply Allocation:0
Unallocated Supply:500
<Demand Information>
RPO001v0
Supply Information)
SP02v0-2(Arranged Supply Information)
Order Response
Product Number:CPU123
Delivery Place:WH1
Shipment Place:SUP1
10/8(10/6) 100
Total Supply:300
Supply Allocation:200
Unallocated Supply:100
<Demand Information>
DCP01v0
Demand Information)
DCP01v0-1
Confirmed Purchase Order
Product Number*CPU123
Delivery Place:WH1
10/6 300
Total Demand:600
Demand Allocation:300
Effective Demand:300
Supply Information)
SP04v0-1(Shipment)
Shipment Notice
Product Number:CPU123
Delivery Place:WH1
Shipment Place:SUP1
(9/29) 0(100)
(9/30) 0(100)
(10/1) 0(100)
Total Supply:300
Supply Allocation:300
Unallocated Supply:0
<Demand Information>
DJ01v0
Supply Information)
SP03v0-0(Arranged Supply Information)
Delivery Confirmation
Product Number:CPU123
Delivery Place:WH1
Shipment Place:SUP1
10/6(10/4) 200
Total Supply:200
Supply Allocation:0
Unallocated Supply:200
<Supply Information>
SP02v0
Demand Information)
DJ01v0-0
Shipment Order
Product Numbe:CPUr
Delivery Place:WH1
10/1 100
10/2 100
10/3 100
Total Demand:300
Demand Allocation:0
Effective Demand:300
Supply Information)
SP04v0-0(Receiving)
Receiving Notice
Product Number:CPU123
Delivery Place:WH1
Shipment Place:SUP
10/1 ( ) 100( )
10/2 ( ) 100( )
Total Supply:300
Supply Allocation:300
Unallocated Supply:300
<Demand Information>
SP04v0

FIG.20

Contents of the requests on the demand information linked with a demand information

Receiving on all the supply information linked with a demand information

Effective Date : 2003/10/3

				Contents of Request		Receiving			Shipment		
Item No.	Required Message	Delivery Place	Date	Qty.	Type of Message	Qty.	Type of Message	Delivery Check	Qty.	Type of Message	Place
CPU123	RPO001	WH1	29-Sep					0	100	Receiving	Sup1
			30-Sep					0	100	Receiving	Sup1
CPU123			1-Oct	100	Shipment Order	100	Receiving	0	100	Receiving	Sup1
			2-Oct	100	Shipment Order	100	Receiving	0			
			3-Oct	100	Shipment Order	100	Receiving	0			
			4-Oct					0	200	Confirmation of Delivery	Sup1
			5-Oct					0			
			6-Oct	300	Confirmed Order	200	Delivery Confirmation	-100	100	Order Response	Sup1
			7-Oct					-100			
			8-Oct			100	Order Response	0	500	Reserved Order Response	Sup1
			9-Oct					0			
			10-Oct	500	Shipment Order	500	Reserved Order Response	0			
			11-Oct					0			

Demand Information

Comparison between the requested contents and the receiving contents. Red parts show a delay in delivery

Shipment information on supply information. The supply information is tabled by column and by place

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